

# Claims

- [c1]
1. An antenna comprising a patch disposed above a ground plane, and a probe disposed between said patch and said ground plane, said probe having a helical shape and being substantially normal to said ground plane, said antenna further comprising means for connecting said probe to means for transmitting a signal to or from said antenna, wherein said probe is adapted to be electromagnetically coupled to said patch.
  2. An antenna comprising a patch disposed above a ground plane, and a probe disposed between said patch and said ground plane, said probe having a meandering shape and being substantially normal to said ground plane, said antenna further comprising means for connecting said probe to means for transmitting a signal to or from said antenna, wherein said probe is adapted to be electromagnetically coupled to said patch.
  3. The antenna as claimed in claim 2, wherein said probe is etched on a substrate and said probe being substantially normal to said patch.
  4. An antenna array comprising a plurality of patches disposed above a ground plane, each said patch having a respective probe of helical shape disposed between said

patch and said ground plane, each said probe is substantially normal to said ground plane, said antenna array further comprising a transmission network connecting said probes to each other and to means for transmitting a signal to or from said antenna array, wherein each said probe is adapted to be electromagnetically coupled to each said respective patch.

5. The antenna array as claimed in claim 4, wherein each said probe having a meandering shape.

6. The antenna array as claimed in claim 4, wherein each said probe is etched on a substrate and having a meandering shape, each said meandering shape probe being substantially normal to said patch.

7. The antenna array as claimed in claim 4, wherein at least one said probe having a helical shape and at least one said probe having a meandering shape.

8. A dual band antenna comprising two patches of different size and disposed a different distance above a ground plane, each said patch having a respective probe of helical shape disposed between each said patch and said ground plane, each said probe is substantially normal to said ground plane, said dual band antenna further comprising a transmission network connecting said probes to each other and to means for transmitting a signal to or from said dual band antenna, wherein each said probe is adapted to be electromagnetically coupled

to each said respective patch.

9. The dual band antenna as claimed in claim 8, wherein each said probe having a meandering shape.

10. The dual band antenna as claimed in claim 8, wherein each said probe is etched on a substrate and having a meandering shape, each said meandering shape probe being substantially normal to each said respective patch.

11. The dual band antenna as claimed in claim 8, wherein one said probe having a helical shape and the other said probe having a meandering shape.